

Urban Challenge, Urban Opportunity

Preface to *Reframing Urban Energy Policy: Challenges and Opportunities in the City Seoul*

By Walt Patterson

We are living in the century of the city. Even within the lifetimes of our grandparents, most people on earth lived in the countryside, in rural areas and villages. Within the past century, however, people all over the world have been leaving the countryside and moving into cities. According to the World Bank, by 1960 nearly 34 per cent of the world's people were living in cities. By 2015 that proportion had risen to 54 per cent, and the trend is relentlessly upward. Moreover, 23 per cent now live in cities of over one million people. The metropolitan areas of the largest cities can now number upwards of 30 million – more than the population of four out of five entire countries in the world. Cities of over 5 million are commonplace. Even the largest cities, such as Shanghai, Sao Paulo and Djakarta, are still growing rapidly.

People move to cities because they see advantages - jobs, amenities and other attractions. But even a modest-sized city needs decision-making and governance. The vast settlements, the 'megacities', now burgeoning on every continent make enormous demands on civic governance. Human activity in cities, especially employment, differs markedly from rural activities. Cities are sprawling arrays of physical infrastructure - buildings, roads, bridges, docks, water pipes, sewers, electricity, gas and rail networks – that must be erected, maintained, repaired, upgraded and replaced. People in cities need shelter, food, water, sanitation, drainage and waste management. All require intensive organization.

Daily life in cities includes an endless variety of jobs, but unlike rural life city life rarely includes the critically-essential activity of food production. Cities have to bring in most of the necessary food, as well as water and materials, often from far outside the city. Goods and people must be moved, into and out of the city and within it, in millions of journeys every day. To feed a concentrated crowd of millions, bringing food from beyond the city limits, delivering and distributing it, is a staggering undertaking. But it is only one of the many activities, also including industry, commerce, education and health-care, essential for the citizens of a liveable megacity.

This presents a daunting challenge, and many cities are now failing to meet it. Far too many urban buildings are flimsy, poorly designed and badly built, even in wealthy areas, to say nothing of ever-expanding slums. Inadequate buildings give inadequate shelter, not only from winter cold but more and more from summer heat. Making such buildings even habitable, never mind comfortable, requires active heating and cooling, usually by burning fuels, either directly or to generate the requisite electricity. Congested streets are crammed with traffic, strangling mobility. Vehicle exhausts, also from burning fuels, combine with fumes from domestic and industrial fires to make city air toxic, unbreathable. A city needs enormous quantities of water, for drinking, for cooking, for industry, for cleaning and sanitation. But many cities are unable to deliver water of the right quality where it is needed, and then dispose of it effectively after use. Urban waterways are all too often polluted and foul. City air and city water, essential for life, may actually endanger it.

As if such local problems were not sufficiently alarming, cities also face, often in concentrated form, a mounting array of problems now affecting the entire planet. The central cause is climate change. Greenhouse gases, particularly carbon dioxide produced by fire, are inexorably raising the average temperature at the earth's surface. The polar icecaps are shrinking. Glaciers are melting. The oceans are expanding. Rising sea-levels may engulf the low-lying coastal areas that include many of the world's best-known cities – New York, Sydney, Rio de Janeiro, Hong Kong, the list of cities in jeopardy could fill pages.

Although normal sea levels are not yet flooding cities, storm surges have already overwhelmed sea defences in many places, as the overheated atmosphere makes hurricanes and typhoons fiercer and more frequent. Rainfall, too, has become frighteningly intense, producing devastating floods in many different places, inundating settlements and drowning their inhabitants. Yet even as some places suffer from too much water, others suffer from too little. Droughts lasting years have dried out some of the world's wealthiest regions, such as California, Texas and New South Wales, to say nothing of poorer areas in Africa and Asia. Droughts turn vegetation into tinder, feeding wildfires that sweep down on cities with relentless fury, overwhelming efforts at control.

The loss of snow-cover in the Himalayas may not at first appear an urban issue – but Himalayan snow provides the water-supply for hundreds of millions of people in cities along the Ganges and the Indus. Carbon dioxide from the fire of burning fuels, much of it in city buildings, industry and transport, is absorbed in the oceans. It turns seawater acidic, dissolving the shells of sea-creatures at the base of the entire oceanic food-chain, threatening a major source of protein and an essential component of urban food-supply worldwide.

Faced with such a battery of problems, some cities are breaking down, the lives of their citizens growing ever grimmer. Other cities, however, are fighting back. City governments have one crucial advantage: they are close to key problems. They can study them at first hand, right on their doorsteps, and work out how best to tackle them. Local problems may offer local solutions. An enlightened city government can get to grips with urban problems directly and in detail. It can enlist and support the active involvement of its citizens in programmes to address the problems, and in doing so to improve their own daily lives. The very density of cities, properly addressed, can be an advantage rather than a disadvantage. It can facilitate more efficient provision of food, water and energy services, and enable easier mobility between home, work and leisure.

Cities, moreover, may also hold the key to tackling the unprecedented global challenge of climate change. National governments have been wrangling since 1988 about how to meet this challenge. After a quarter-century of largely ineffectual negotiations, in December 2015 197 national governments at last came together in Paris to sign an agreement undertaking to limit atmospheric carbon dioxide emissions, to keep global temperature rise to below 2 degrees Celsius. But the national commitments thus far on offer will not meet this criterion. Moreover, the agreement will not come into effect until 55 per cent of countries responsible for 55 per cent of total carbon emissions have ratified it. The process between national governments is encouraging, but much too slow. National government involvement, long on rhetoric but lacking actual action, still falls far short of meeting the climate challenge.

Many city governments, however, recognize that cities bear heavy responsibility for creating the global climate threat. Cities still rely on fire to make inadequate buildings habitable, to power urban industry and vehicular transport, and to generate much of the electricity for city lighting, motors, refrigeration and electronics. Enlightened city governments understand that both their local

problems and the global problems arise from the same cause. Fire, from burning fossil fuel, produces not only the emissions that poison local urban air, but also those perturbing global climate.

Much of this fuel-burning fire is wasteful and unnecessary, used to compensate for inefficient infrastructure and other inefficient hardware. Cities also rely too much on electricity generated with fire, burning coal or natural gas, or with the even more violent phenomenon of nuclear fission. Planners too often consider fire-based electricity cheap, even as the emissions from fire suffocate their citizens and upset the climate. Fortunately, however, cities and other electricity users now have another option - fire-free renewable electricity from wind, sunlight and moving water. Renewables are growing steadily and dramatically cheaper and more reliable, and their use is expanding rapidly in many parts of the world.

City governments acknowledge and welcome the opportunity this offers. Civic leadership can reduce the use of fire and fuel, by upgrading buildings and improving efficiency of other assets – passive measures with long-term value, eliminating wasteful supply. Civic leadership can also replace fire-based traditional electricity with fire-free renewable electricity. Such measures have fostered active and fruitful cooperation between city and other local governments around the world.

As far back as 1990, for example, local leaders created the International Council for Local Environmental Initiatives, ICLEI, now known as Local Governments for Sustainability, drawing together upwards of 1500 cities, towns and regions. In 2004 three international organizations came together to found an umbrella group called United Cities and Local Governments, UCLG, now thought to be the largest local government organization in the world. In 2005, the mayors of some twenty megacities joined forces to work together at city level to combat the mounting threat of climate disruption. The network, originally designated C20, has since been renamed the C40 Cities Climate Leadership Group. Even that label is now a serious understatement, with more than 80 large cities, such as Beijing, Los Angeles and Mexico City, already affiliated. Every year the network surveys its members, to identify the powers that city governments have over water, energy, transport, waste management, urban measurement and planning, as well as finance and economic development. The network keeps a record of civic action plans and programmes to combat climate change, sharing information and technical expertise. It has already catalogued nearly 10 000 actions, with plans for continued expansion.

As the C40 website states: “City mayors are directly accountable to their constituents for their decisions, and are more nimble than state and national elected officials to take decisive action—often with immediate and impactful results. What our cities do individually and in unison to address climate change can set the agenda for communities and governments everywhere.”

At the Paris conference in December 2015, under the aegis of ICLEI, C40 and UCLG, the mayor of Paris welcomed more than 1000 mayors and other local officials from five continents to a summit that closed with the “Paris City Hall Declaration”. It pledged to “advance and exceed the expected goals of the 2015 Paris Agreement to be reached at COP21 to the full extent of our authorities,” and to “support ambitious long-term climate goals such as a transition to 100% renewable energy in our communities, or a 80% greenhouse gas reduction by 2050”. It asserted that cities can reduce greenhouse-gas emissions by up to 3.7 gigatons by 2030, equivalent to nearly a third of the difference between national commitments and the 2-degree Celsius threshold that stands as the current global goal.

Many of the requisite policies and measures are already in practical use in some leading cities. But they could be adopted much more widely, and implemented more effectively, accelerating the

progress toward fully sustainable cities, including megacities. The example of Seoul, the Seoul Municipal Government led by Mayor Park Won Soon, and the vigorous and committed citizens of Seoul, can be a beacon for other megacities. The World Wide Fund for Nature (WWF) chose Seoul from among 167 contestants as its Global Earth Hour Capital 2015. Mayor Park, president of ICLEI and chair of the World Mayors Council on Climate Change, has been awarded the 2016 Gothenburg Prize for Sustainable Development. As described in detail in subsequent chapters of this book, the success of Seoul's energy strategy, One Less Nuclear Plant Plan, renamed Seoul's Sustainable Energy Action Plan, is a spectacular demonstration of how much a city can achieve, and how rapidly. We, the members of Mayor Park's Seoul International Energy Advisory Council, are proud to be a part of it.

Yet Seoul is only one city among many. Working together, the world's cities are on the march, toward a better, brighter future. The urban challenge is also an urban opportunity, not only for city dwellers around the world but for the planet we all share.